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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.: 6,868,719

Issued: March 22, 2005

Serial No.: 10/004,719 Examiner: William Oen

Filed: December 4, 2001

Assignee: Dana Corporation

Title: Tire Pressure Monitoring Method

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT FOR PATENT OFFICE ERROR (37 C.F.R. 1.322)

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Dear Sir:

Patentee hereby respectfully requests that a Certificate of Correction issue to correct a PTO error occurring in the following claim:

Claim 8, line 14, replace "values" with --value--.

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Patricia Simms

(Signature) Patricia Simms

Date of Signature: April 5, 2005

Although no fee is believed owed, the Commissioner is authorized to change any fees associated with this correspondence, and credit any overpayments, to Deposit Account No. 04-0060.

Respectfully submitted,

By: Kristene M Ragan

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PTO/SB/44 (04-04)
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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,868,719

DATED : March 22, 2005

INVENTOR(S) : Stephen P. Claussen and Daryl J. Stacer

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Claim 8, line 14, replace "values" with --value--.

MAILING ADDRESS OF SENDER:

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PATENT NO. 6,868,719

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(12) **United States Patent**
Claussen et al.

(10) **Patent No.: US 6,868,719 B1**
(45) **Date of Patent: Mar. 22, 2005**

(54) **TIRE PRESSURE MONITORING METHOD**

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(73) Assignee: **Dana Corporation**, Toledo, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/004,719**

(22) Filed: **Dec. 4, 2001**

(51) **Int. Cl.**[7] **B60C 23/02**
(52) **U.S. Cl.** **73/146.2**
(58) **Field of Search** 73/146, 146.2, 73/146.5, 146.8; 340/442–448; 152/415, 419

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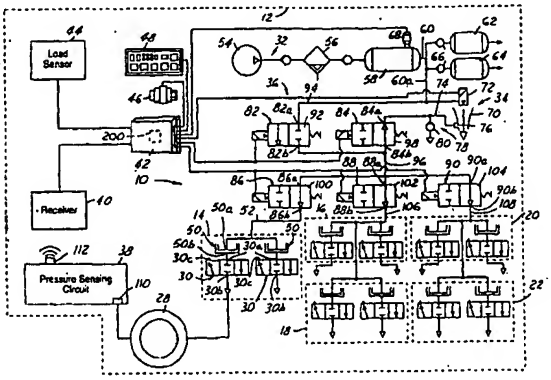
(57) **ABSTRACT**

A method of monitoring the fluid pressure of, with a sensor of a tire pressure management system disposed without, a tire that prevents overinflation of same. The method of monitoring a fluid pressure of a tire with a sensor, disposed in conduit assemblies for conducting fluid to or from the tire, of a tire pressure management system includes providing a pulse of compressed fluid to the conduit assemblies, unless a counter exceeds a count, the fluid in the conduit assemblies thereafter having a conduit pressure. The pulse has a duration that corresponds to a ratio defined by a first predetermined amount divided by a second predetermined amount.

14 Claims, 3 Drawing Sheets



comparing said first fluid pressure to a target pressure;

providing a pulse of compressed fluid to said conduit when said first fluid pressure is less than said target pressure, said pulse having a duration determined responsive to a duration of a previous pulse of compressed fluid provided to said conduit and a change in pressure in said conduit resulting from said previous pulse; and,

repeating said ascertaining, comparing, and providing steps until said first fluid pressure in said conduit reaches said target pressure.

2. The method of claim 1 wherein said first fluid pressure is ascertained following a predetermined hold time that begins after said previous pulse is provided to said conduit.

3. The method of claim 1 wherein said duration of said previous pulse is a preset period.

4. The method of claim 1 wherein said duration of said pulse is determined in accordance with the following formula:

$$D_1=n*D_0*[(P_T-\text{temp}_1)/(\text{temp1}-P_L)]$$

wherein n is a predetermined value, D_0 is said duration of said previous pulse, P_T is said target pressure, temp1 is said first fluid pressure and P_L is a previous fluid pressure in said conduit resulting from said previous pulse.

5. The method of claim 1 further comprising the steps of:

determining a second fluid pressure in said conduit following a predetermined line leak hold time; and,

comparing said first and second fluid pressures.

6. The method of claim 5 wherein said tire pressure equals said first fluid pressure if a difference between said first and second fluid pressures is less than a predetermined amount.

7. The method of claim 5 further comprising the step of logging a line leak fault if a difference between said first and second fluid pressures is greater than a predetermined amount.

8. A method of determining a tire pressure in a vehicle tire comprising the steps of:

ascertaining a first fluid pressure in a conduit disposed between a fluid source and said tire using a sensor disposed in said conduit;

comparing said first fluid pressure to a target pressure;

incrementing a counter when said first fluid pressure is less than said target pressure;

comparing said counter to a predetermined value;

providing a pulse of compressed fluid to said conduit when said first fluid pressure is less than said target pressure and said counter is less than said predetermined value, said pulse having a duration determined responsive to a duration of a previous pulse of compressed fluid provided to said conduit and a change in pressure in said conduit resulting from said previous pulse; and,

repeating said ascertaining, comparing, and providing steps until said first fluid pressure in said conduit reaches said target pressure or said counter reaches said predetermined values.

9. The method of claim 8 wherein said first fluid pressure is ascertained following a predetermined hold time that begins after said previous pulse is provided to said conduit.

10. The method of claim 8 wherein said duration of said previous pulse is a preset period.

11. The method of claim 8 wherein said duration of said pulse is determined in accordance with the following formula:

$$D_1=n*D_0*[(P_T-\text{temp1})/(\text{temp1}-P_L)]$$

wherein n is a predetermined value, D_0 is said duration of said previous pulse, P_T is said target pressure, temp1 is said first fluid pressure and P_L is a previous fluid pressure in said conduit resulting from said previous pulse.

12. The method of claim 8, further comprising the steps of:

determining a second fluid pressure in said conduit following a predetermined line leak hold time; and,

comparing said first and second fluid pressures.

13. The method of claim 12 wherein said tire pressure equals said first fluid pressure if a difference between said first and second fluid pressures is less than a predetermined amount.

14. The method of claim 12 further comprising the step of logging a line leak fault if a difference between said first and second fluid pressures is greater than a predetermined amount.

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